Navigator Software

Monarch Instrument Rev 0.99 May 2006

User Help File

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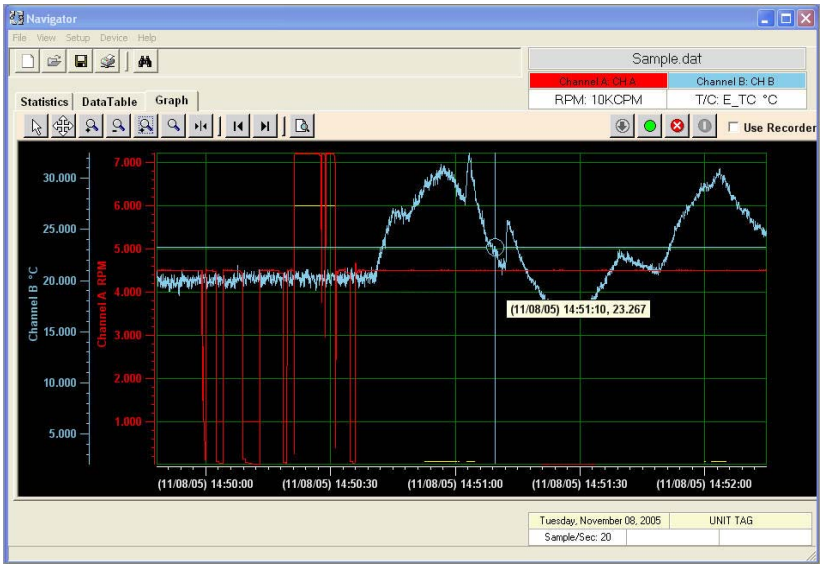
APPENDIX A – LANGUAGE FILES



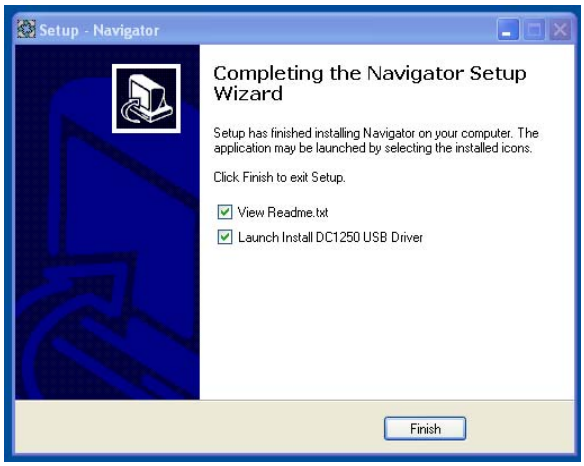
1 NAVIGATOR SOFTWARE

The DataChart Navigator Software is a program for viewing and exporting both real-time and non-real-time data from the DataChart 1250. It also enables recorders to be controlled and configured remotely.

2 INSTALLATION

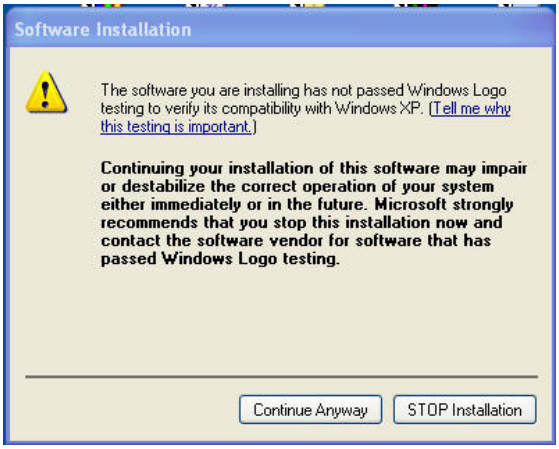
This program will run on Windows XP/2000 and later. It is not compatible with earlier versions of Windows.

1 If you have the USB option on your DC1250, make sure it is **not plugged** in during the installation.
2 Insert the DataChart Navigator CD into the CD drive. The setup program should launch automatically if your system is set to auto play CDs. If not, select the CD directory and run the setup.exe file. This will launch the "**Welcome to Navigator Setup Wizard**"
3 Accept the license agreement and the default install directory or modify it as needed.
4 Accept the default start menu folder or modify it as needed.
5 Decide whether you want a desktop icon and check the box if you do.
6 If you have the USB option, make sure to check the "Launch Install DC1250 USB Driver" box as shown below



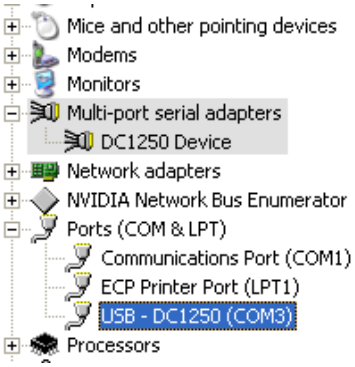
7 Click Finish.
8 If this is your first installation, the DC1250 VCP Installer will launch and run (assuming you checked the box per 6 above). Accept the license agreement and continue.
9 If you wish to install the driver manually, run setup.exe that is located on the release CD in the Ti-Usb_driver folder. If you have previously installed the USB driver the installer will uninstall the old driver. You will then have to install the driver manually.
10 Once the software has been installed, turn the DC1250 on and plug the USB cable into the unit and your PC. If this is the first time doing this the "Found New Hardware Wizard" will launch.

11 Make sure the installation CD is still in the drive and select the "Yes, now and every time I connect a device" option then choose "Next>".
12 Select "Install the software automatically (Recommended) option and click "Next>"
13 The Wizard will search for DC1250 device – depending on your system this may take some time. Once the driver is found you will get a warning message:



14 Select "Continue Anyway". The program will then install and run the USB-1250 driver.
15 Select "Install the software automatically (Recommended) option and click "Next>"
16 The Installer will search for the USB 1250 driver and when found will display the same message as in 13 above.
17 Select "Continue anyway" then when done select "Finish" to complete the installation.

Note: Although the DC1250 connects via the USB port, the PC sees it as a virtual COM port. You can check the successful installation by right clicking on the ***My Computer*** icon in the Start menu and selecting ***properties***. Then choose the ***Hardware*** tab and click the ***Device Manager*** button. You should see two instances of the DC1250 device as shown below, one as "Multi-port serial adapters" and again under Ports (COM &LPT) as USB-DC1250 (COMx). For successful operation x should be 6 or less.



Tip: Make sure you have no other programs running that take control of the serial ports in the background (like some Hotsync programs) as these will prevent the Navigator software from seeing the COM port.

The Navigator is now installed in **Demo mode**. If you have purchased an upgrade license, you may activate it by running the software and selecting **Setup - Features - Update** on the tool bar and typing the license number provided.

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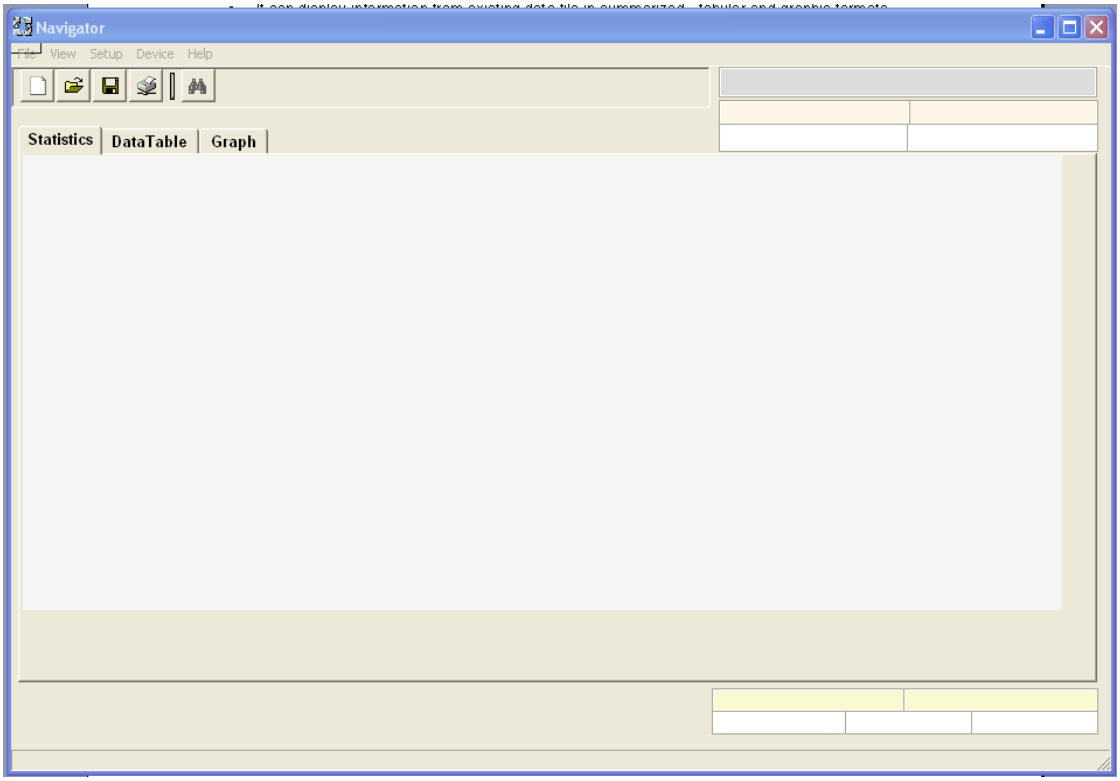
3 USING NAVIGATOR SOFTWARE

3.1 STARTING THE PROGRAM

The Navigator software has the following main features:

- It can display information from existing data file in summarized, tabular and graphic formats.
- It is capable of monitoring an external device and collecting real-time data (this requires the USB or Ethernet option on the recorders)
- It can export the collected data to Excel.

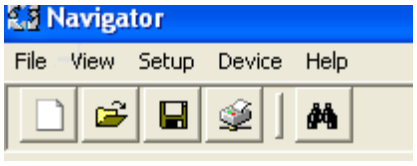
To start the program, click the desktop icon if installed (shown left), or use the Window's start menu. This will launch the main dialog shown below.



There are three tabs in the workspace, a menu bar at the top with the basic icons below. The tabs are

Statistics	shows an overview of the loaded data.
Data Table	shows a tabular layout of the data.
Graph	shows a graphic representation of the data.

The menu items are



The **File** menu allows the user to open or export a file, slect the data source or Exit the program.
The **View** menu duplicates Icon option for the Graphics Screen.
The **Setup** menu allows the user to customize the program - Section 3.2
The **Device** menu allows interaction with a remote recorder – Section 3.6
The **Help** menu provides help files or information about the software.

The icons are from left to right New, Open File, Save, Print Table and Search.

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3.2 SYSTEM SET-UP

There are a number of items that can be set up before using the program, although these default to useable options.

The **Setup** menu has the following options

3.2.1 **Language** – the default is **English**. It is simple to add languages (see Appendix A). If there is a language file in the Navigator directory that contains languages besides English, these will be shown and the user can select the language of his/her choice.

3.2.2 **Preferences** –

3.2.2.1 **Temperature** – sets the default working temperature **Celsius or Fahrenheit**. Once selected, all temperatures will be in these units irrespective of how they were recorded. This is a start up setting and cannot be changed once selected without reloading the file. Default is Centigrade.

3.2.2.2 **Decimal Places** - determines how numeric data will be displayed. Select **0,1,2 or 3** places after the decimal. (default is 2)

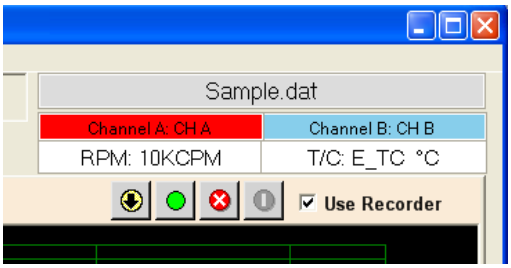
3.2.2.3 **Default Directory** - Sets the default directory where data files are saved or read from. The user can change the system default Program Files/Navigator/Data

3.2.3 **Features** – allows the user to upgrade from the free demo (default) version to the Lite or Plus versions. Select **Update** and enter your serial number in the spaces shown. Upgrades can be purchased from your distributor. Use the menu **Help – About** to see what features you have.

3.2.4 **CommPort** – allows the user to override the default settings for the USB Com port if required. These values are set automatically from the registry entries made by the driver install routine and should not need to be changed.

3.3 LOAD DATA FILE

There are two sources for data, the local PC or the remote DataChart. In order to load data from a remote DataChart it is necessary to select **Use Recorder** from the **File** menu or go to the Graph window (click the Graph tab) and check the **Use Recorder** box on the top right as shown below. Obviously a DataChart also needs to be connected to the PC.



To load data file, click **File** menu then choose **Open** or click the File Open icon

In the Open File dialog, choose the file that you want to load. If the "Use Recorder" box was checked the dialog box will only show files that are on the compact flash card on the remote DataChart. Note that loading files from a remote DataChart is a lot slower than loading them from the local hard drive or compact flash card plugged into the PC. It is possible to only load partial files to save time – see below. If using files from the PC, simply browse to the directory in which the file to be loaded resides.

While the file is loading, a progress bar on the bottom of the screen indicates loading progress. When loading large files, enough data will be loaded to fill the table or the graphics screen. When scrolling beyond these limits additional data will be loaded as needed. Once data is loaded the **Statistics** window opens showing a summary of the loaded data.

In the example below, the file Sample.DAT was loaded. There are two channels. Channel A was called CHA and will be represented on the graph by the colored trace shown on the left below the file name. It units are RPM with 10kRPM being the full scale. Channel B was called CHB and is a Type E Thermocouple measuring °C and will be represented on the graph by the colored trace shown on the right below the file name. The data recording was started on Tuesday, November 08, 2005 at 2:49:48 PM. The sample rate was 20 Samples/Sec

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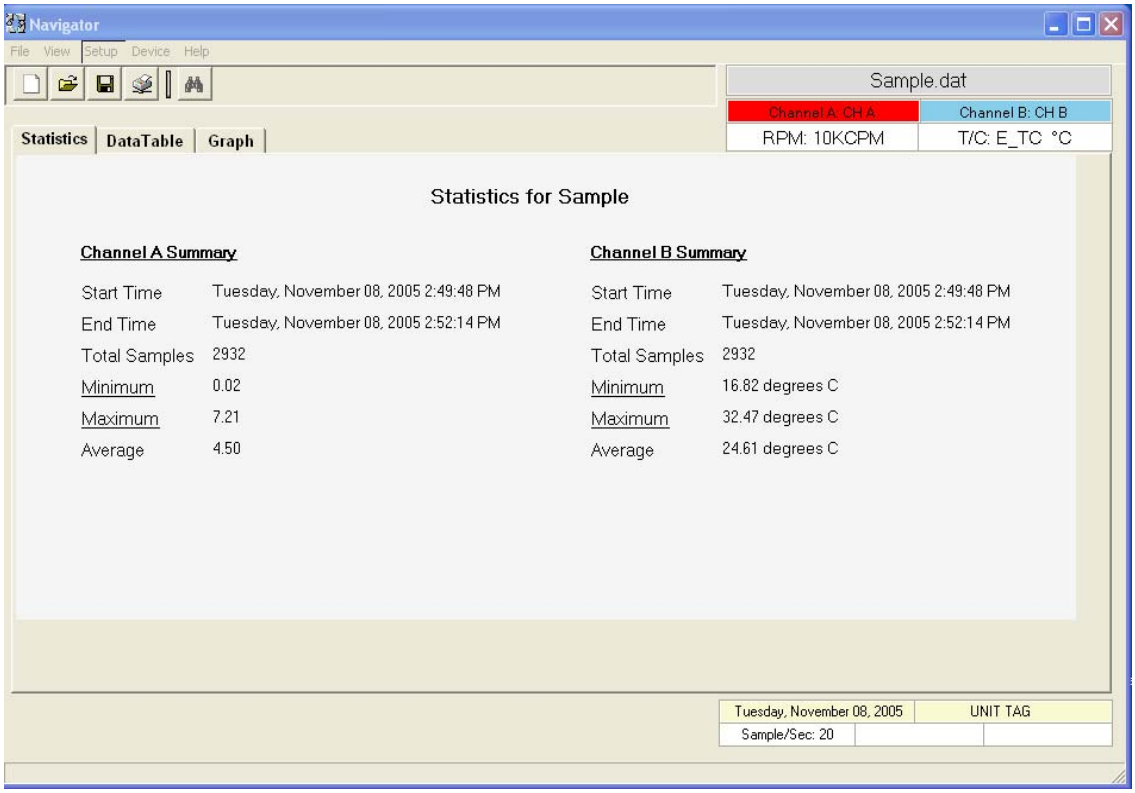
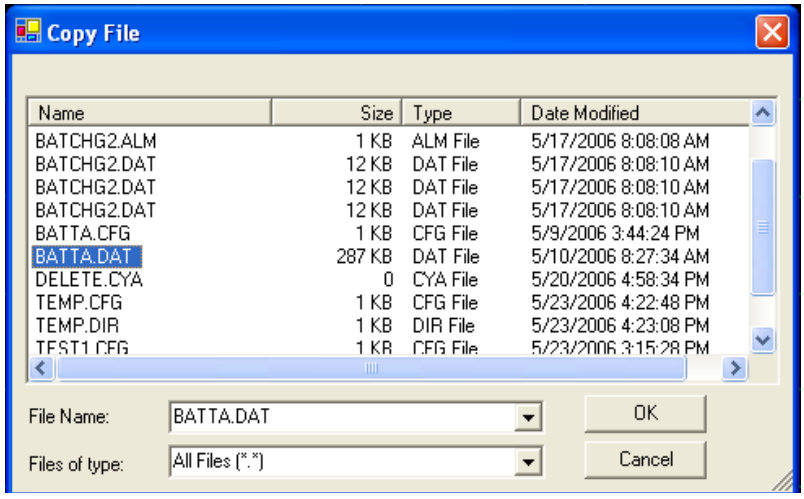
and the recorder is identified by the UNIT TAG. By clicking on Minimum or Maximum you can jump directly to those points on the graph.

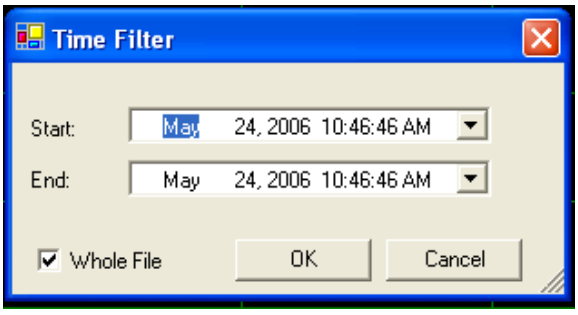


3.3.1 LOADING PARTIAL FILES

When opening files from the recorder, large files can take a long time to load. You can simply download the period of interest without the need to load the entire file. So if you need information for 12:00PM to 3:00PM on May 11th, 2006, you can request only this data – assuming it is in the data file you have chosen. Make sure Use Recorder has been checked – see above, and go to **File – Open**.



The Copy File Dialog box will open as shown showing files on the remote recorder. Data files are type .DAT.



Once you select a file and click **OK** you will get the **Time Filter** dialog box. If the **Whole File** box is checked you can click **OK** to load the entire file, otherwise uncheck this box and edit the **Start:** and **End:** times for the data you want. Click **OK**. If the data you are looking for is in the file, the information will be loaded, otherwise you will get an error message telling you that no such data can be found. Thus you can leave a recorder to record events and simply download the data when an exception occurs.

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3.4 DATA TABLE WINDOW

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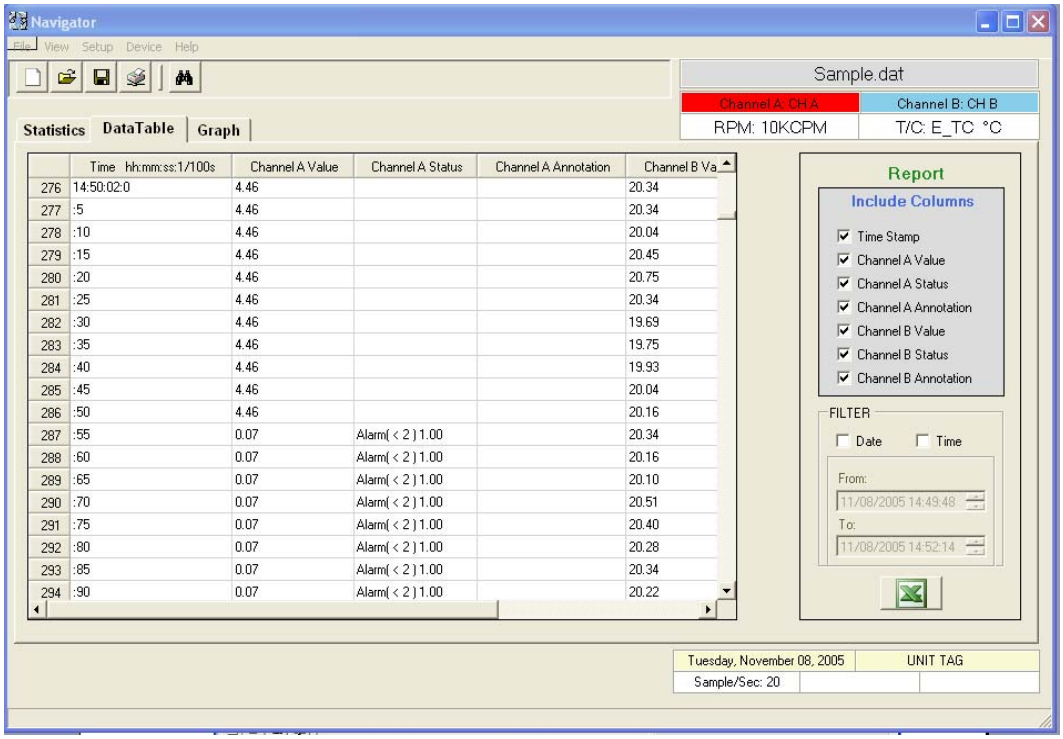
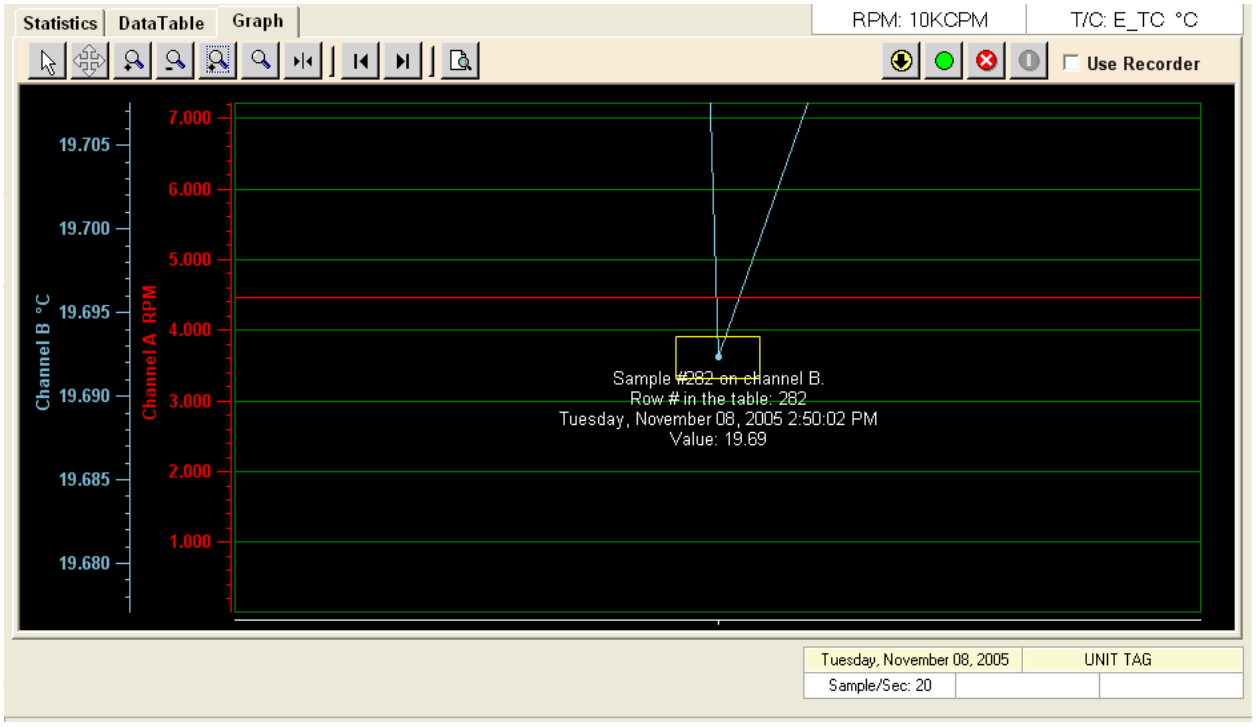


The DataTable page shows the time and value of every data sample on each channel and any alarms associated with them as shown above. This window is also used to export data directly into an Excel™ spread sheet and can be used to highlight a specific point on the graph

3.4.1 JUMPING TO A SPECIFIC POINT ON THE GRAPH

If you double click a value in either **Channel Value** column in the **data table**, the program will highlight that point in the **Graphics** window. The graph will be automatically scaled to show the unique point highlighted by a rectangular box as shown below:



Move the cursor into the rectangle for precise information about the point. The graph can be zoomed and panned to show the relationship of this point to the rest of the traces. (Refer to the section on the Graphics window).

3.4.2 CREATING A REPORT

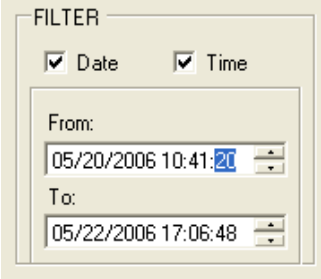
Select the **Data Table** Tab. The Navigator has the ability to create custom reports to be exported to Excel™ directly. The user can select the entire data set (beware large files) or highlight rows in the table or choose specific dates and times using the filter. Also, the user can select what columns from the table to export.

To export all the data simply click the Excel™ button or choose **File – Export** from the menu. To select multiple rows from the data table, click the left edge of the starting row to export. This will highlight the row. Then scroll to the last row to export and ***hold down the shift key***, and click the left edge of the last row. This will highlight all rows between the start and the end. Then click the Excel™ button. The data will be exported and the spreadsheet will open automatically.

The report can be further customized by selecting which columns to include in the report. This is done via the **Report** dialog box to the right of the window – shown right.

The **Include Columns** check boxes determine which columns of the data table will be exported to the spreadsheet. Simply select the data you want. The Channel status is the condition of the alarms, if any. The channel annotation is the content of any user comments attached to that point.

Below the Include Columns window is the Filter. This is yet another easy way to limit what data is exported to the spreadsheet. You can filter data by **Date** or **Time** or Both simply by checking the relative boxes as shown below.



The **From:** and **To:** data entry areas default to the start and end times of the data in the table to be exported and can be edited by the user to specify an exact time frame for export. Once all parameters are set, press the Export button (The one with the Excel™ logo on it shown below) and the data will open in an Excel™ spreadsheet. Note: you will need to have a valid copy of Excel™ on your PC, otherwise use the **File – Export** menu option to name a CSV (comma delimited) file for later use.

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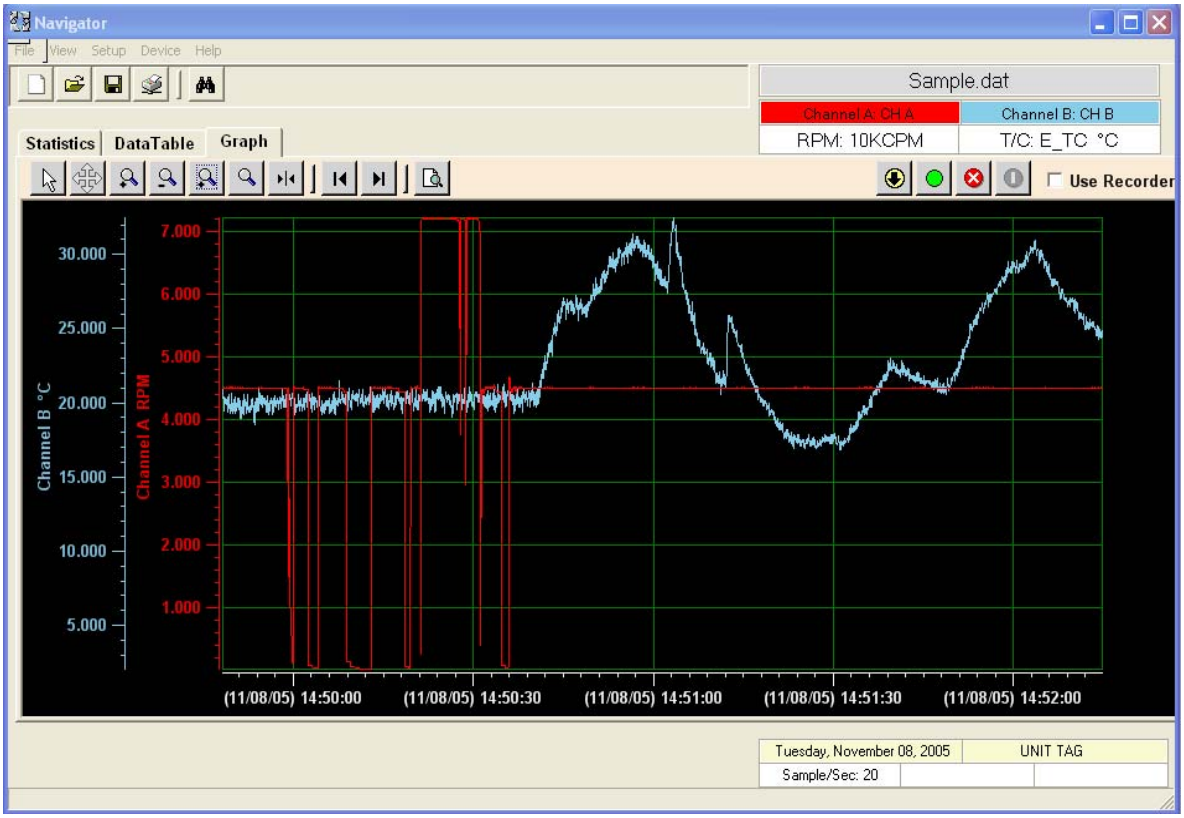
3.5 GRAPH WINDOW

A graphic representation of the information can be displayed by selecting the Graph tab. The following figure is an example of a graphic page.



There are two channels shown on the graph, channel A and channel B. The X-Axis is the time and theY-Axis is the data sample value. Each channel has its own y-axis with matched color so it can be easily identified. On the top right corner of the screen is the information box giving the name of the file and identifying the two traces showing the original name and scale settings for each. The graphic data is loaded from a file or may be displayed in real time if connected to a DataChart DC1250. See 3.5.5

The graphic area is fully interactive. Data can be zoomed and scrolled, the interaction controlled by the menu icons above the graph. Also, specific points may be located using the Search option.

3.5.1 GRAPH BUTTONS

- Select
The default cursor. This is used to scroll the trends horizontally and vertically by simply right clicking in the graphics. Traces can be scrolled individually by clicking and dragging the individual vertical scales or together by clicking and dragging in the graphics area.

- Stretch
Click this button to stretch (zoom) or shrink the graph along the x-axis (time) and y-axis (scale). Traces can be zoomed individually by clicking and dragging the individual vertical scales or together by clicking and dragging in the graphics area.

- Zoom In
Click this button to zoom in the graph.

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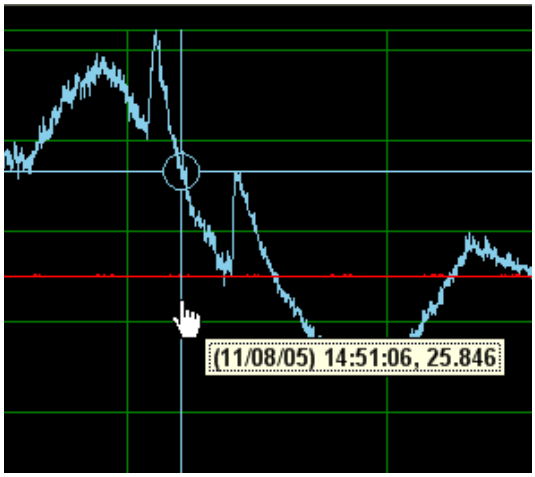
- Zoom Out
Click this button to zoom out the graph.

- Zoom Window
Click this button to zoom to a user defined window. When clicked the cursor will turn into a draw window tool. Draw a window around the area of interest by holding the right mouse button and dragging the window. On release the window area will fill the graphics screen.

- Zoom All
Click this button to fit all data into one screen.

- Cursor
Click this button to enable the cursor. Once enabled, right click anywhere on the graph and select **Channel A – Setup** or **Channel B – Setup** to lock the cursor to that trace. As the cursor is dragged along the time base by right clicking, the cross-hairs will track the trace and the pop-up box will show details about the point in the cross-hairs as shown opposite. The cursor will turn to the finger pointer whenever the cursor can be dragged.



- Scroll to end
Click either the left or right scroll button to jump to the start or end of the data

- Print Preview
Once you have set up the graph and wish to print it, click this button to preview print. The printout is WYSIWYG (What you see is what you get) except that a dark background will be removed to preserve ink.

3.5.2 ZOOM TO FIT

Navigator allows the user to automatically zoom (scale) a channel to fit the vertical axis to the maximum and minimum values of that part of the trace on the screen.

There are two edit boxes on the dialog that specifies the channel tag in different colors as shown below:

The colors match the channel trace colors. If the user changes the trace color, the corresponding edit box will change color accordingly. If the user double clicks one of them, that trace will zoom to fit the screen in the vertical direction. The fit is – minimum value is placed at the bottom of the graph, maximum value at the top. Use the zoom and stretch tools above to fine tune the fit.

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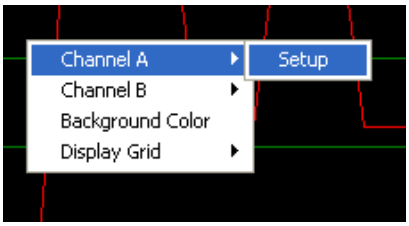
3.5.3 CUSTOMIZING THE GRAPH PROPERTIES

You can modify the graph properties by right clicking the mouse in the graphics area. A menu appears.



The user can modify Channel A or B properties, change the color of the background or turn the grid on or off. Moving the cursor over the Channel A item pops up the Setup window. Click on this to modify the Channel A properties..

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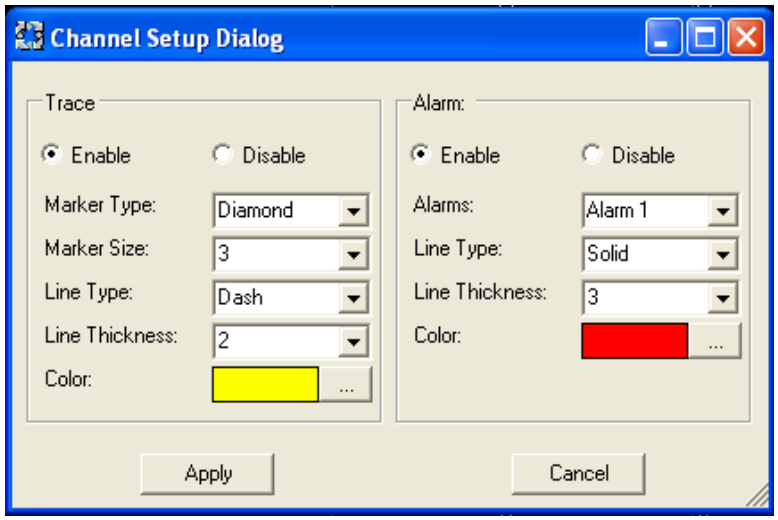

The trace can be turned off by selecting Disable. This will allow a single trace to be displayed.

If a trace is enabled it can be customized as follows:

Marker Type – identifies the actual points recorded. The trace is extrapolated between these points. The points can be marked by a square, circle or diamond and the size can be adjusted. No marker can also be selected.

Line type – can be solid, dashed or dotted, and the thickness and color can be selected to suit.

If you apply the settings shown above for the trace, the trace will look like that shown below. Note that the vertical scale is always in the same color as the trace.

The **Alarm** window allows the display of alarm conditions **provided alarms were set on the original data** capture. Enable the Alarm by checking the appropriate button.

The Alarms: pull down menu will show any alarms that were set in the original recording. These will be identified as Alarm 1,2 and so on. You can select how these alarms will be indicated.

Note: The Alarms will only be visible in the event that a trace actually entered an alarm condition in which case that part of the trace in alarm will be indicated by the choice made in the setup. In the example above, Alarm 1 will be indicated by a solid red line 3 pixels thick. The trace will look as follows:

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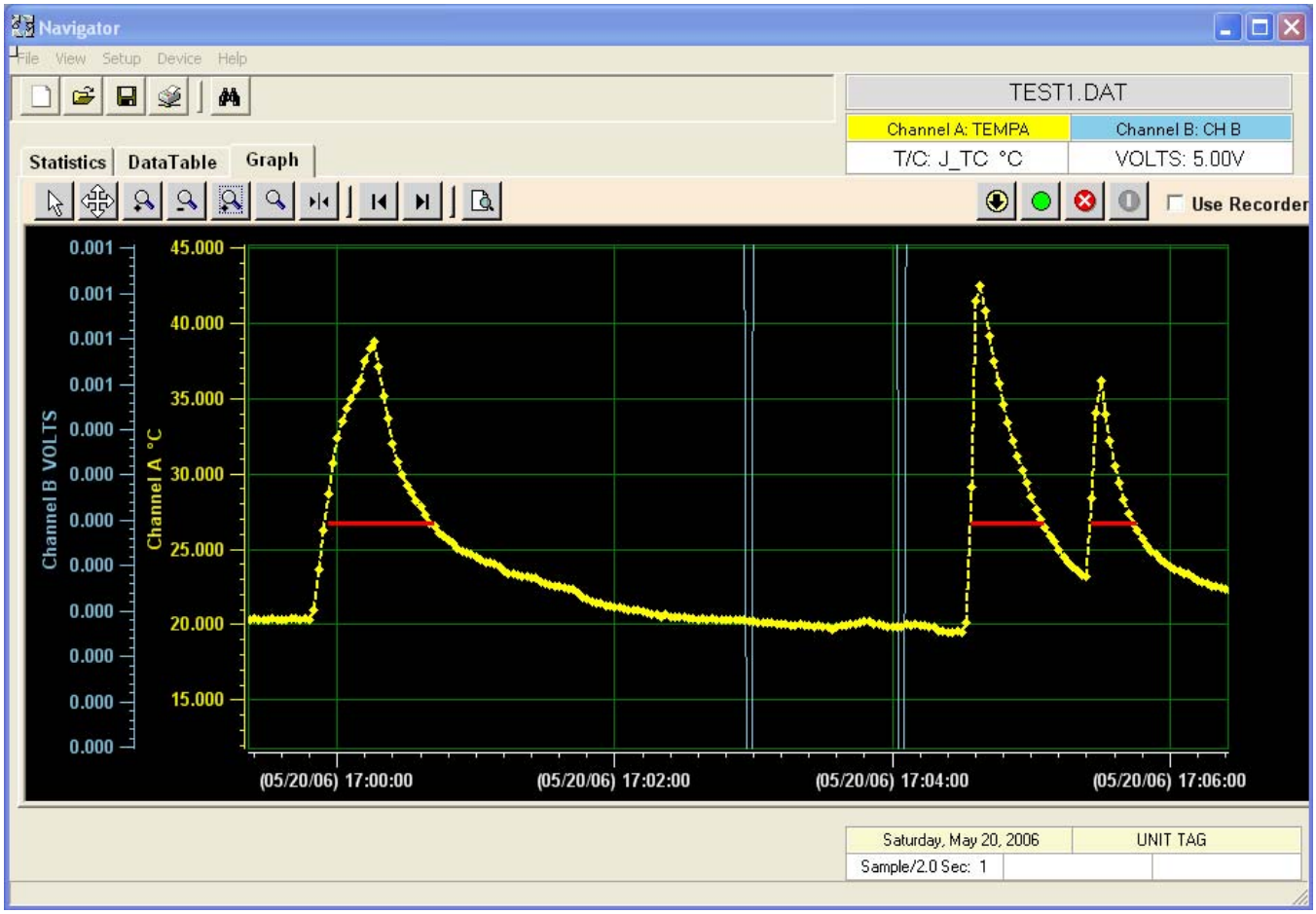
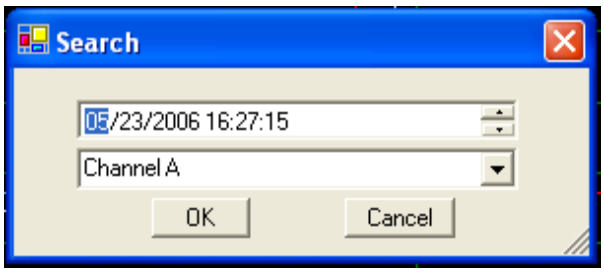


Any data in the trace above the red line is in alarm.

Note: Double clicking on any point on the trend will take you to the corresponding entry in the Data Table.

3.5.4 SEARCH

By using the search icon the user can jump directly to time/date related information in the Data Table or on the Graph.



Enter the Date or Time required (select the Channel on the Graph) and click OK. The data will be rearranged and the point on the graph, or in the data table required will be highlighted. If no data can be found (out of the range selected) an error message to this effect will be displayed.

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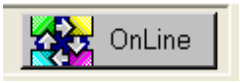
3.5.5 USING REAL TIME DATA

Data can be displayed in real time and recorded to a file on the local PC by connecting a DataChart DC1250 to the PC via a USB port. If a remote recorder is connected to the PC you will see the OnLine icon as shown to the right.



Several of the buttons on the Graphic window relate to this function.

In order to read files from the recorder or display data in real time it is necessary to check the "Use Recorder" box on the top right of the graphics window or in the **File** menu

Once checked, the buttons to the left of the checkbox function as follows.

- Save to File
Click this button to save real time data to a file on the PC. It is necessary to name the file. Note – always choose a new name, it is not possible to append to an existing file.

- Start Real Time Data Display
Click this button to start the real time data trends. The PC will make connection with the DataChart and start displaying real time data at the sample rate set in the recorder. The axes will auto scale to maximize the display resolution. The user can override these settings by Pausing the display and zooming the display to suit

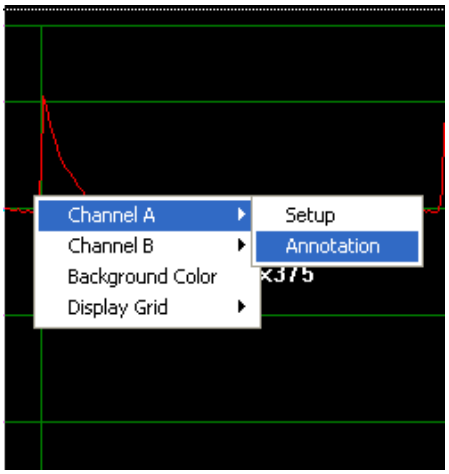
- Stop Device
Click this button to stop the real time trend. Once stopped, all parameters are reset once the start button is clicked. To stop temporarily use the pause button.

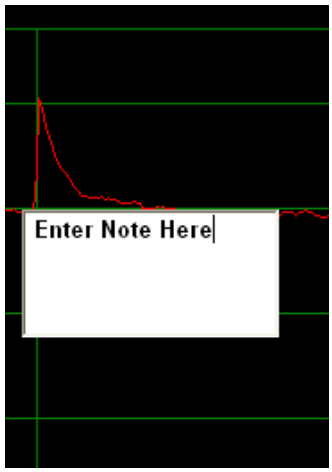
- Pause
Click this button to temporarily suspend the real time update. Data will continue to be saved in the background. During pause it is possible to zoom or stretch the display to alter the time base and scale. It is also possible to append a note to the trend line – see below. Once this is done, press the Start button to resume. The pause button will be grayed out until the Start button is pressed.

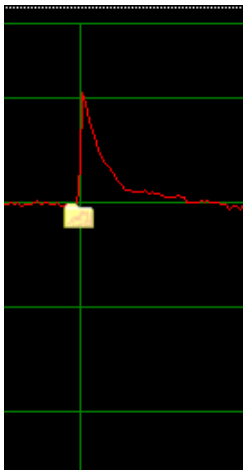
3.5.6 ANNOTATING REAL TIME DATA

It is possible to add an annotation to the real time trend to explain an event or make notes. To do this it is necessary to **Pause** the display – see above. Place the cursor at the point on the trend where you wish to add a message and right click.

Select the channel then select Annotation. This will pop up a note box where you can enter the information. Once done, press Enter and a folder icon will be placed at the selected point on the trend.







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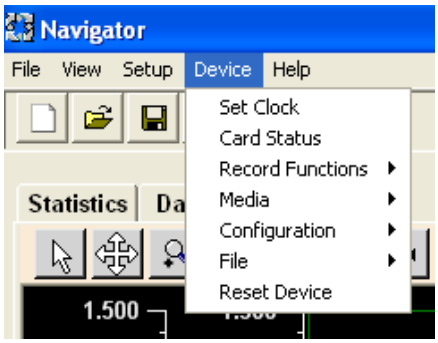
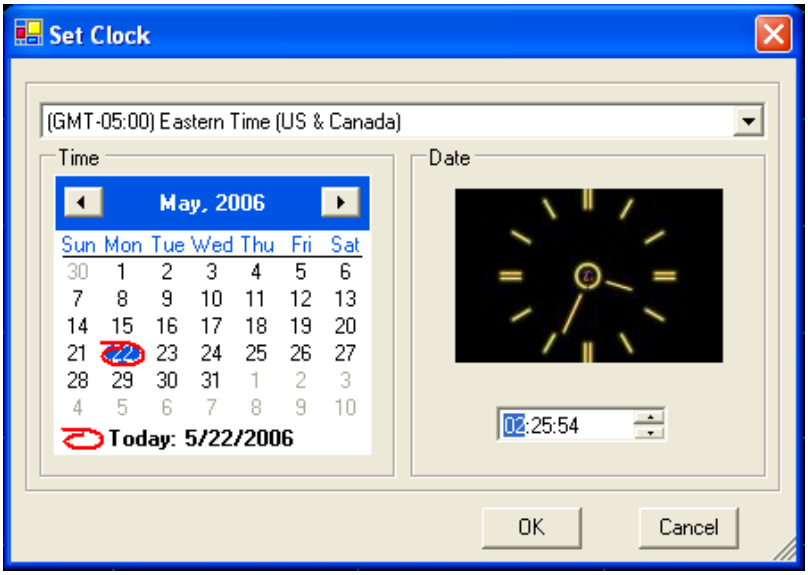
This folder will travel with the trend and can be reviewed at any time by double clicking the folder icon. This information is also saved to the file if the file is currently recording to the PC.

3.6 WORKING WITH REMOTE RECORDERS



The remote recorder can be controlled from the **Device** Menu. As shown at left, the user can set the clock, get the card status (Compact Flash card in the remote recorder), Control the record functions, Change the Recorder configuration, manipulate files and reset the device. Note that a number of these functions cannot execute if the remote recorder is in record mode or the real time graphing is active. You will receive warning messages.

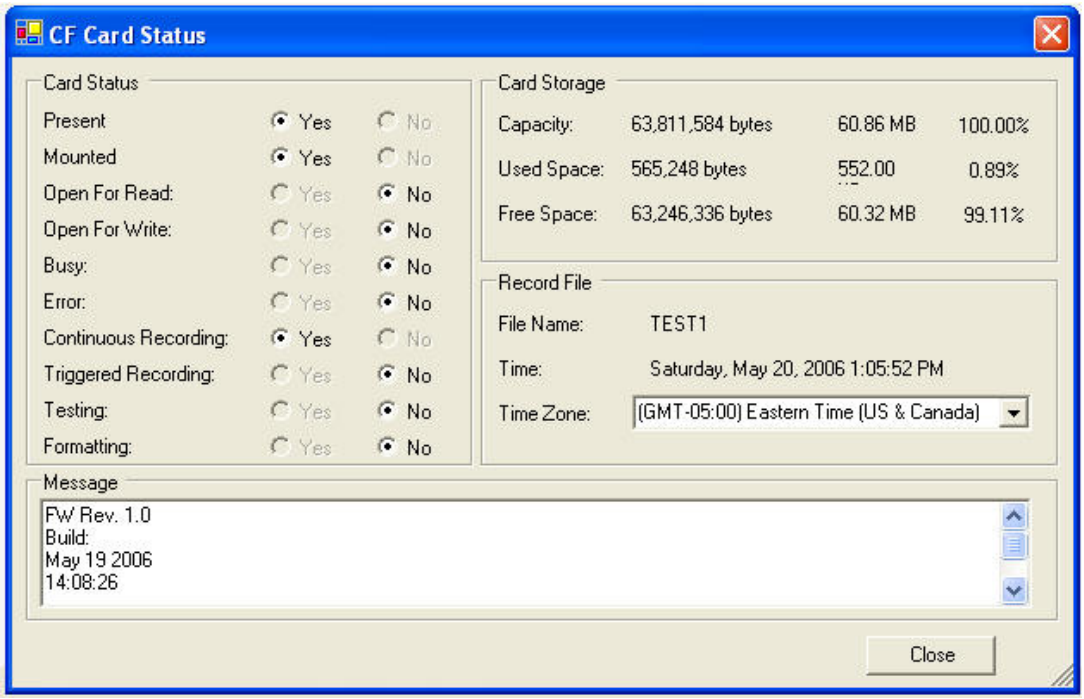
3.6.1 SET CLOCK



Clicking this option will bring up the Set Clock window which will default to the current time and date of your PC. The user can change this as needed. Click the OK button to set the time and date on the remote recorder to this time. You cannot change time while the remote recorder is in record mode – the option will be grayed out.

3.6.2 CARD STATUS

Clicking this option will display the status of the Compact Flash card in the remote recorder. This will bring up the status window shown below



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3.6.3 RECORD FUNCTIONS

This option allows the user to stop or start recording in the remote DataChart, or set the triggered record mode on.

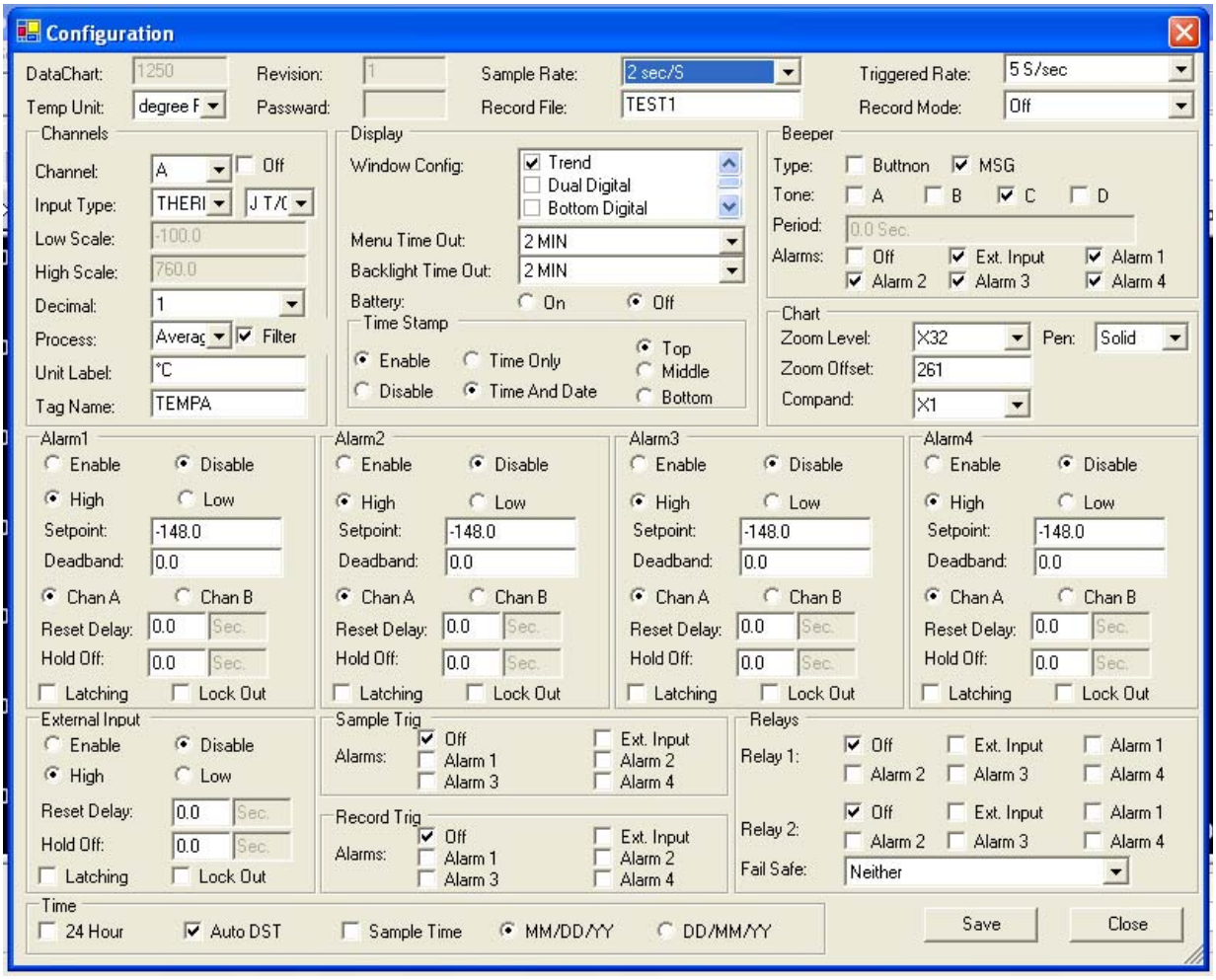
3.6.4 MEDIA

This option allows the user to format the compact flash card in the remote recorder. Use caution as this can destroy data. You can check the content of the card using the File option below. You cannot format a card while the recorder is in the record mode.

3.6.5 CONFIGURATION

This option allows the user to read, write, save, change or send a configuration. The configuration file, designated by .CFG is a copy of all the setups in the recorder.

3.6.5.1 **Read** - allows the user to download the configuration file from the recorder to the PC. You will need to select the file from the file dialog box. Once the configuration file has been read the configuration popup dialog box will open. To edit a file remotely ensure the **Use Recorder** box is checked.



This is a representation of everything that is currently set up in the DataChart. The parameters may be edited and saved (back to the recorder). Check the recorder manual for setting details. Note: In order to see the settings for Channel B. select "B" from the **Channel:** pull down menu.

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3.6.5.2 Save – Remote only. This will save the configuration as set up in the recorder onto the compact flash card. It does not save the file locally. Once saved on the recorder it can be read locally.

3.6.5.3 Change – Allows the user to change the configuration on the DataChart. This will present a dialog box with all the files on the remote recorder. Choose an alternate configuration file to load and press OK. The recorder will reset with the new configuration in place.

3.6.5.4 Create – This will bring up a default configuration window that the user can use to make a new configuration file.

3.6.5.5 Send – This will copy a configuration file from the PC to the remote recorder.

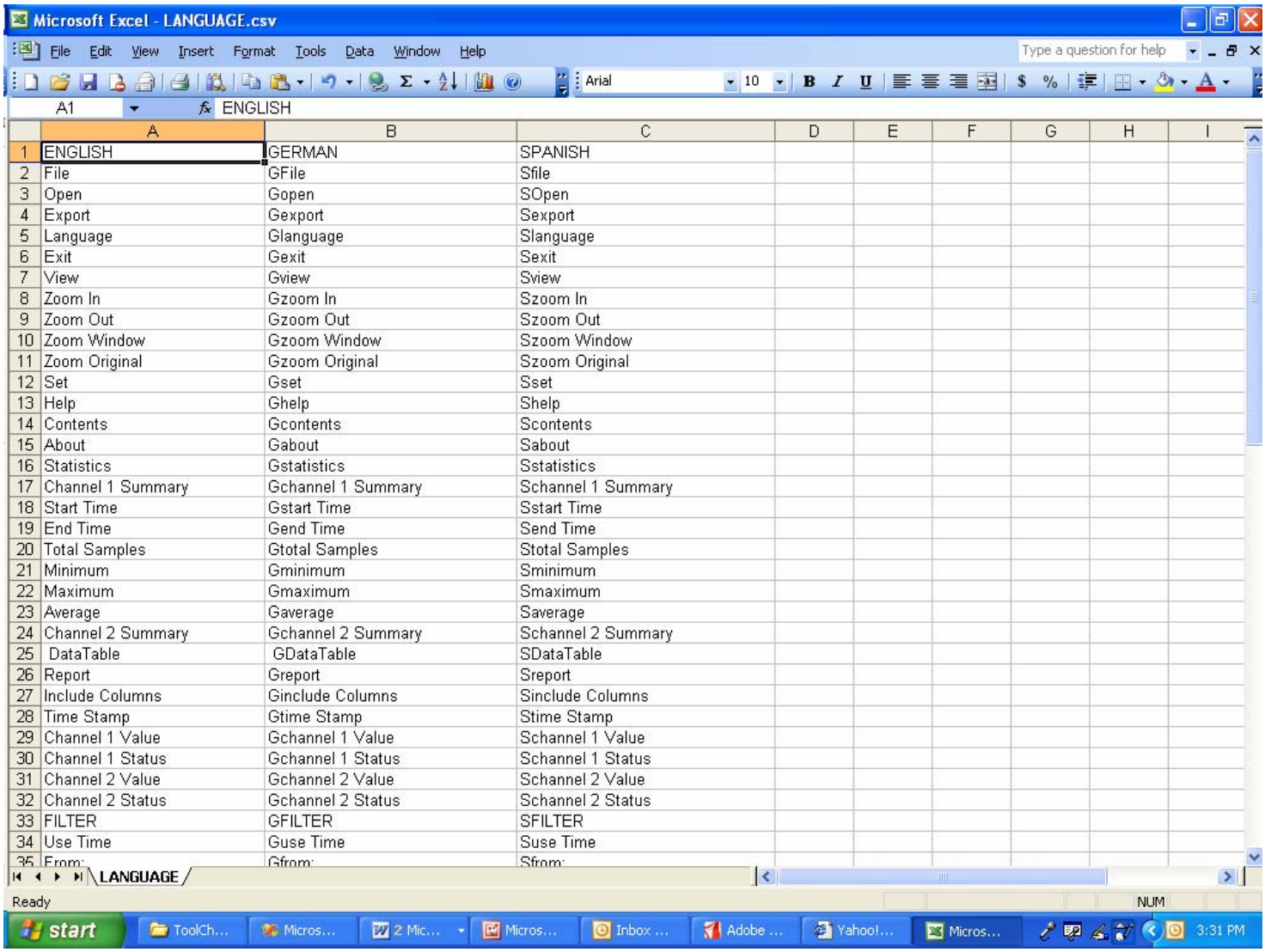
3.6.6 File – this option allows the user to read a file or delete a file from the compact flash card on the remote recorder.

3.6.7 Reset – This will force a reset of the remote recorder. This option is not available if the recorder is in the record mode.

APPENDIX A - LANGUAGE FILE

Adding a language is a simple process. Navigator uses an Excel™ compatible file **Language.CSV** which resides in the Navigator program directory, to read all text that is displayed in the program. The first column is the English words. To add a language, simple add a column and make sure the first entry in the column is the language. When the **Setup – Language** option is chosen, the program reads the first row of this spreadsheet and displays the languages available.

This is the format and an example of a hypothetical language file. It has English, German and Spanish. The letter 'G' is added in front of the text for German and 'S' is added for Spanish. Selecting either German or Spanish from the Setup – Language menu will replace the English text with the corresponding German or Spanish text. The dited file must reside in the program directory.



	A	B	C
1	ENGLISH	GERMAN	SPANISH
2	File	GFile	Sfile
3	Open	Gopen	SOpen
4	Export	Gexport	Sexport
5	Language	Glanguage	Slanguage
6	Exit	Gexit	Sexit
7	View	Gview	Sview
8	Zoom In	Gzoom In	Szoom In
9	Zoom Out	Gzoom Out	Szoom Out
10	Zoom Window	Gzoom Window	Szoom Window
11	Zoom Original	Gzoom Original	Szoom Original
12	Set	Gset	Sset
13	Help	Ghelp	Shelp
14	Contents	Gcontents	Scontents
15	About	Gabout	Sabout
16	Statistics	Gstatistics	Sstatistics
17	Channel 1 Summary	Gchannel 1 Summary	Schannel 1 Summary
18	Start Time	Gstart Time	Sstart Time
19	End Time	Gend Time	Send Time
20	Total Samples	Gtotal Samples	Stotal Samples
21	Minimum	Gminimum	Sminimum
22	Maximum	Gmaximum	Smaximum
23	Average	Gaverage	Saverage
24	Channel 2 Summary	Gchannel 2 Summary	Schannel 2 Summary
25	DataTable	GDataTable	SDataTable
26	Report	Greport	Sreport
27	Include Columns	Ginclude Columns	Sinclude Columns
28	Time Stamp	Gtime Stamp	Stime Stamp
29	Channel 1 Value	Gchannel 1 Value	Schannel 1 Value
30	Channel 1 Status	Gchannel 1 Status	Schannel 1 Status
31	Channel 2 Value	Gchannel 2 Value	Schannel 2 Value
32	Channel 2 Status	Gchannel 2 Status	Schannel 2 Status
33	FILTER	GFILTER	SFILTER
34	Use Time	Guse Time	Suse Time
35	From:	Gfrom:	Sfrom:

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